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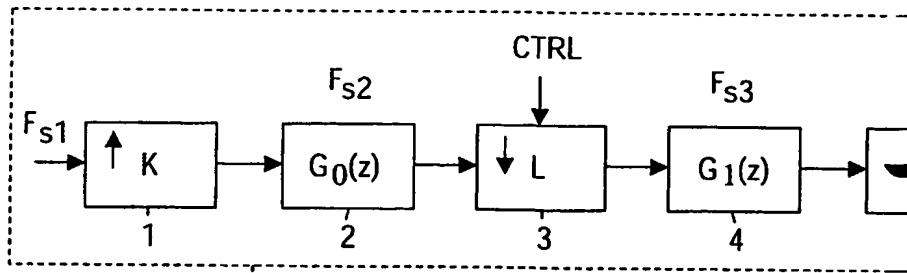
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(54) Title: UP AND DOWN SAMPLE RATE CONVERTER



12

(57) Abstract: Sample rate converters (12) for converting input sample rates ( $F_{s1}$ ) of signals into output sample rates ( $F_{s4}$ ) are provided with sample rate adapters (3,6) for adapting (basic idea) intermediate sample rates ( $F_{s2}$ ) such that output sample rates ( $F_{s4}$ ) are larger (upsampling) or smaller (downsampling) than input sample rates ( $F_{s1}$ ), to reduce their complexity and to avoid bookkeeping and structure switching problems. Sample rate adapters (3, 6) in the form of variable sample rate decreasers (3) allow the sample rate converters (12) to be used in video applications requiring DC-out being equal to DC-in. Sample rate adapters (3, 6) in the form of variable sample rate increasers (6) allow the sample rate converters (12) to be used in audio applications. By locating the sample rate adapter (3, 6) between a fixed sample rate increaser (1) for increasing with a factor K and a fixed sample rate decreaser (5) for decreasing with a factor M, filters (2,4) in between can be designed independently from the varying factor L as long as K and M are fixed and  $L \leq K$ .

WO 2004/088841 A3

# INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, COMPENDEX, INSPEC, IBM-TDB

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/65713 A (KONINKL PHILIPS ELECTRONICS NV) 2 November 2000 (2000-11-02) page 2, line 5 - line 24; figures 2,4	1,9-11
Y	US 5 157 395 A (DEL SIGNORE BRUCE ET AL) 20 October 1992 (1992-10-20) column 3, line 22 - column 4, line 26; figure 1	2-8
Y	US 5 485 152 A (SOBOL JAMES M ET AL) 16 January 1996 (1996-01-16) column 2, line 34 - line 54	2-5
A	US 5 892 695 A (VAN DALFSEN AGE J ET AL) 6 April 1999 (1999-04-06) column 4, line 8 - line 52; figure 3	6-8
		1-11

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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